

At SBU, we are working on estimating space charge. Some key points :

- We know from ALICE/STAR that we will have large space charge corrections, and that these do not break the TPC
  - The ion density will be about the same as for the ALICE upgrade
- We want to educate ourselves about how to go about these corrections. At SBU, we are gearing up for electrostatic calculations to have an electric field to input into the simulations
- The real question to answer is about event-by-event fluctuations in the field. Again, this can't be a killer because they will be the same as for ALICE, but we still need to calculate it

The question here is : what do we really want to answer in the main simulations and on what timescale? One strategy is to ignore space charge for now in the sims, but have a calculation of the field distortion to present separately

Work is ongoing to test the TPC performance in HIJING. Plots will be available soon. The main questions:

- How well does the TPC-to-VTX matching work in HIJING as a function of inner radius?
  - Also, what about event pileup?
- at some radius the occupancy may be so large that clustering fails to provide useful information. What is that radius?

Early indications are that the dca distribution is distorted in central collisions with the default TPC design, but I'm not yet sure how much of that is due to un-optimized tracking algorithms

## Merging the TPC branch

My priority now is to pull out some hard-coded parameters (Pad sizes, gas ionization parameters, etc.) to the top-level macros. Once that is done, I will begin attempting merging.

- There have been changes to the tracking modules in the TPC branch. These are subtle, but I need to do regression testing
- How to go about making sure the TPC software is ready to merge into master? Do we want a rigorous way to certify that the software is ready to freeze for the pre-CDR?